

REMARKS

Claims

Claims 1–21 are currently under examination.

Re-opening of prosecution

In accordance with the administrative guidelines under MPEP §1207.04, the Examiner has re-opened prosecution by levying a new ground of rejection under §103(a). This paper constitutes a Reply under 37 CFR §1.111 (to the non-final Office action).

Amendments

No amendments are presented herein. The pending claims appear on the Appendix of Claims section of the Appeal Brief filed July 12, 2010.

Rejections under §103(a)

The Examiner has applied a new reference by Mozzo et al. (European Radiology, 1998) to reject the method claims 1-13 and 16-18 under §103(a). At page 3 of the present Office Action, it is alleged that even though Delegacz fails to teach or suggest that the 2D projection of a 3D object, wherein the 2D sub-area is accessed to a 3D database, the recited aspect is taught by the newly-cited Mozzo et al. This contention and the rejection based thereon are both respectfully traversed.

Delegacz describes creation of a 3D visualization system to aid physicians in observing abnormalities of the human lung. The reference only teaches or suggests a method for 3D-visualisation of a lung using 2D-lung slices by CT. See, the entire ABSTRACT section. These lung slices run through a segmentation procedure for better visualization of the lung tissue. The segmented lung slices are used as input for the 3-D-visualisation (see, chapter 4: “Segmentation” and the disclosure in Figures 1-3a). The visualization system presents the user a slice sequence view (see, Figure 4), a view of the lung as a 3D-object by volume rendering (see, Figures 5 and 6) and sliding thin slabs of the 3D-projection (Figures 7 and 8). Further the 3D-visualisation system allows a general look of the lung object by surface rendering or surface and volume rendering (Figures 9 and 10). To render surface and volume data, Delegacz uses a known algorithm called “shear-warp.” See, page 402, last paragraph of the article.

Such a combination of surface and volume data is not the claimed 2D projection of a 3D object. Also Deleagcz does not show the claimed 2D having sub-areas with access to a 3D

database. This aspect is conceded in the paragraph bridging pages 6 and 7 of the Office Action mailed on December 12, 2008, wherein the Examiner states that “Delegacz fails to specifically teach the detailed image is shown on the screen within the subregion.” The Office Action then proceeds to contend that the missing claim element is taught by Cheng-Seng et al. and Mozzo et al. is utilized for its generic teachings on the manner of assessing a 2D sub-area with respect to a 3D database. Applicants respectfully traverse this contention.

Cheng-Seng describes a simulated surgery of a 3D-image to allow a better view on the resulting image after the cutting operation. See, chapter 2.3 the simulated surgery and the Figure before the “Conclusion” Section of Cheng-Seng et al. It is therein described that the technique involves using a mouse to create several control points on the image and the polygon enclosed by these points is the section that simulates the surgery. Secondly, users must specify the depth to be cut. With this depth, the cut volume will be specified, and all the data in this volume must be removed. But this detail image does not have different information content than the 3D-object. In Cheng-Seng the picture of the 3D-object and the sub-area are based upon the same 3-D-volume data base. Cheng-Seng does not involve the handling of any 2-D-images.

Mozzo discusses the use of volumetric CT, which is based on cone-beam technique instead of traditional fan-beam technique, for dento-maxillo-facial imaging. Images obtained with the device are reported as various 2D sections of a volume reconstruction and geometric accuracy. Measurements of the *geometric accuracy* (evaluated with reference to various reconstruction modalities and different spatial orientations, is 0.8-1 % for width measurements and 2.2 % for height measurements) and *the radiation dose absorbed by the patient*, which is obtained using specific phantoms, are used in image reconstruction. Mozzo states that new system appears to be very promising in dento-maxillo-facial imaging and offers good prospects for large-scale use of the CT technique in diagnostic applications. However, Mozzo fails to teach what Delecagz and Cheng-Sheng do not, for example, with regard to methods for presenting image data that represents a three-dimensional object in a space, comprising generating projection data which represents a two-dimensional projection of the object by computationally superimposing multiple image planes. Mozzo, at most, discloses a generic method for presenting 3D image data, which is laden with the same limitations as with the art methods discussed in the paragraph bridging pages 1 and 2 of the instant application. More importantly, Mozzo fails to rectify the limitations in the aforementioned primary Delecagz and/or Cheng-Sheng references. For example, in Figures 6 and 7, Mozzo just shows how

different combinations of images can be projected in a window. Since all these images are arranged as *tile windows*, Mozzo fails to teach or suggest the claimed **image-in-image function** displayed within a sub-area on the monitor. See the aspects recited in instant claim 1. Thus the asserted combination of Delecagz and Cheng-Sheng in view of the new-cited Mozzo et al. does not hint at the claimed method with an image-in-image function between different categories of images and databases. Absent such, the lack of inventive step rejection is without merit. Withdrawal of the rejection is respectfully requested.

Asserted combination of references fails to teach all the elements of the instant application

The visualization method accomplished by combining the above-cited Delecagz, Cheng-Sheng and Mozzo fails to arrive at the instantly claimed invention. To this end, Cheng-Sheng teaches a method for tracking an anatomical detail which is different from Mozzo et al. and the method recited in instant claim 1. As is taught by the Mozzo article in col. 2, ¶2, at page 1560, pointing to an anatomic detail on one 2D view allows automatic recovery of all the other 2D images arranged as tile windows. However, this method deviates away from the displaying techniques recited in instant claim 1. As such, the totality of disclosure in the cited references is totally silent with respect to the claimed image-in-image function for displaying detailed information of a 2D projection. Insofar as the asserted combination of cited references fails to teach or suggest each and every feature of independent claim 1, the holding of obviousness under 35 U.S.C. §103(a) is without merit. To this end, Applicants direct the Examiner's attention to *Ex parte Wada and Murphy*, Appeal No. 2007-3733 (decided: January 14, 2008), which reversed a §103 rejection because the Examiner did not explain where or how cited art taught or suggested all of the features of a claimed invention. See, for example, the following BPAI articulation of applicable law:

When determining whether a claim is obvious, an examiner must make “a searching comparison of the claimed invention - including all its limitations - with the teaching of the prior art.” *In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995) (emphasis added). Thus, “obviousness requires a suggestion of all limitations in a claim.” *CFMT, Inc. v. Yieldup Intern. Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003) (citing *In re Royka*, 490 F.2d 981, 985 (CCPA 1974)). Moreover, as the Supreme Court recently stated, “there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR Int'l v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (emphasis added)).

Withdrawal of the rejection is respectfully requested.

The asserted combination of references leads a skilled worker away from the claimed invention

There is no motivation for the skilled worker to use Cheng-Sheng's methods in way taught by Mozzo et al. especially given that the Cheng-Sheng reference says nothing about handling of 2D-images and the Mozzo reference teaches a projection method that is different from the displaying aspect recited in the claims. For example, Mozzo does not teach or suggest displaying the projection obtained from computational super-imposition of multiple image planes on a monitor, wherein a sub-area is then selected therefrom and an image having different information content than the projection is generated therein. In contrast, Mozzo et al. in combination with the aforementioned Delecagz and Cheng-Sheng leads a skilled worker to use an anatomical detail on a 2D view and to recover it anatomically on all other reformatted 2D slices. With respect to references that teach away from the claimed subject matter, Applicants submit that it is by now well-settled that it is improper to combine references where the references teach away from their combination. See, MPEP §2145 and *In re Grasselli*, 713 F.2d 731, 218 USPQ 769 (Fed. Cir. 1983). Thus, the PTO's reliance on Mozzo et al. is without merit. Favorable action is respectfully requested.

Claims 14 and 15

With regard to claims 14-15, the Examiner has withdrawn her reliance on the secondary reference by Cheng-Sheng et al., but now proceeds to allege that the claimed invention is obvious over the previously-cited Delecagz et al. and Engel et al. This rejection is respectfully traversed.

With respect to these dependent claims at issue, Applicants will not burden the record with a discussion of same since they merely add to the unobviousness of claim 1. However, in view of the fact that the asserted combination of Delecagz and Engel, even at their broadest interpretation, fail to teach or suggest all the elements of claims 14 and 15, it is respectfully submitted that this rejection is without legal merit. See *Ex parte Wada and Murphy*, Appeal No. 2007-3733 (decided: January 14, 2008), discussed *supra*.

Therefore, it is respectfully submitted that the instantly claimed subject matter is fully inventive over the cited references and that the Office Action has failed to meet the basic criteria for *prima facie* case of obviousness. As such, all the rejections under 35 U.S.C. §103(a) should be withdrawn.

In view of the above remarks, favorable reconsideration is courteously requested. If there are any remaining issues which could be expedited by a telephone conference, the Examiner is courteously invited to telephone counsel at the number indicated below.

The Commissioner is hereby authorized to charge any fees associated with this response to Deposit Account No. 13-3402.

Respectfully submitted,

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